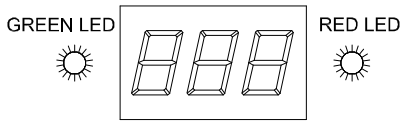
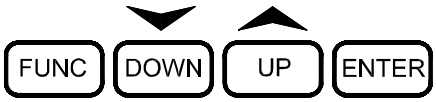
OPERATION

The unit uses standard DMX 512 controller. With the touch-switches and the digital display screen, DMX start address can be easily set and the various setup options may be configured.



The display shows the DMX start address after the projector is switched on (if you have already set the DMX start address and saved it, the screen will display the last setting).



TO SET THE DMX START ADDRESS

Press the UP or DOWN buttons and the display will show the DMX start address.

Confirm your choice by pressing the ENTER button, this will save and set the DMX start address.

The display will show the latest setting each time the projector is powered up.

To control the projector with a DMX controller the DMX start address must be set.

Ensure that none of the Stand-Alone options is set or they will interfere with correct DMX operation.

SETUP OPTIONS - PROJECTOR CONFIGURATION

To browse through the various Setup Options, press the FUNC button consecutively. There are 11 Option codes (1~B), and each code has a specific function. The functions provided are listed in the following table.

SETUP OPTIONS		
CODE	**CHOICE**	**FUNCTION**
1	N	No pan mirror
	Y	Pan mirror
2	N	No tilt mirror
	Y	Tilt mirror
3	1	Run sound activation demo 1
	2	Run sound activation demo 2
	3	Run sound activation demo 3
	N	Stop sound activation demo
4	Y	Self test enable
	N	Self test disable
5	Y	Without DMX512, built-in DEMO program enable
		Connect DMX512, Run sound activation demo 1, 2, 3, and built-in DEMO program according to music
	N	Built-in DEMO program disable
6		Not used
7		Not used
8		Not used
9		Not used
A		Not used
B		Not used

When under functional operation, the display format of the digital display screen is:

Once you have selected the desired operation code, press the key UP or DOWN to select “y” (means ON) or “no “(means OFF). N = NO, Y = YES.

Press the key ENTER to save the selected function and configuration. If the display is showing “y”, then the setting has been enabled. In the same way, if it was showing “n” when you pressed ENTER the option has been disabled. The Red LED will flash during this operation.

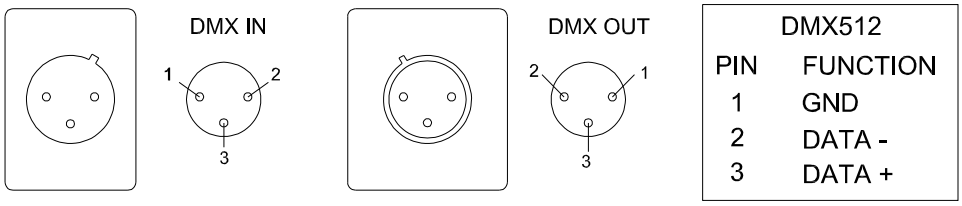
During function set operation, Green LED will flash one time when press ENTER to indicate the set is valid. The Red LED will be lit when DMX512 signal is normal.

Note:

1. The codes 3, 4 and 5 should be set “no” When operation.
2. When under sound activation, can use controller to adjust or set 3-Y condition.
3. When use DMX512 controller, codes 4, 5 and 6 should be set “no”.
4. Adjust 1-Y and 2-Y to select suitable display direction according to the actual installation direction.

XLR CONNECTORS AND TERMINATOR

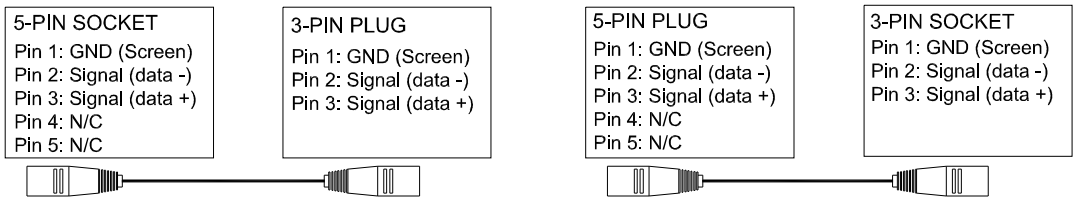
XLR CONNECTORS



Connection between controller and projector and between one projector and another must be made with 2 core screened cable, with each core having at least a 0.5mm diameter. Connection to and from the projector is via cannon 3-pin XLR plugs and sockets which are included with the projector. The XLRs are connected as shown in the figure above.
Note: care should be taken to ensure that none of the connections touches the body of the plug or each other. The body of the plug is not connected in any way. The LAZER 150 accepts digital control signals in standard DMX512 (1990) format.

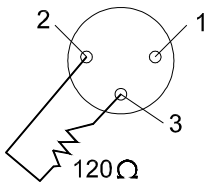
5-PIN AND 3-PIN CONVERSION

LAZER 150 uses 3-pin XLR plug / socket. If your controller uses 5-pin XLR plug / socket, you should convert 5-pin plug / socket into 3-pin socket / plug as shown below.

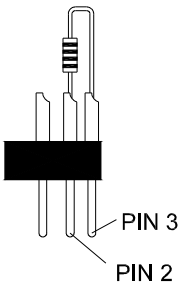


DMX TERMINATOR

In the Controller mode or Master/Slave mode, the DMX output has to be connected with a DMX terminator at the last fixture in the chain. This prevents electrical noise from disturbing and corrupting the DMX control signals.
The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated below.

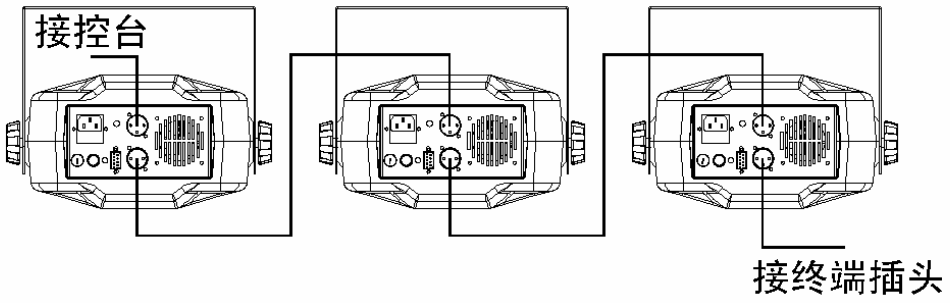


DMX TERMINATOR
CONNECTION
Connect a 120Ω(OHM) resistor across pins 2 and 3 in an XLR plug and insert into the DMX out socket on the last unit in the chain.



DMX512 CONTROL

Each board must be given a DMX start address so that the correct projector responds to the correct control signals. This DMX start address is the channel number from which the projector starts to "listen" to the digital control information being sent out from the controller. The board has 16 channels, so set the No. 1 projector's address 001, No. 2 projector's address 017, No. 3 projector's address 033, No. 4 projector's address 049, and so on.
Certainly, you may use formulation: address = channels x (projector No. –1) +1
For example, for the No. 5 projector's start address, you should calculate according to formulation: 16 x (5 – 1) +1 =65, so you set the No. 5 projector start address 065. (How to set DMX start address please refer to "Operation" section.)
Connect the controller's output to the first fixture's input, and connect the first fixture's output to the second fixture's input. The rest may be deduced by analogy. Eventually connect the last fixture's output to a DMX terminator as shown in the figure below.



DMX CONTROL CHANNEL FUNCTIONS

The board uses 16 DMX channels. They are listed in the following table.

CHANNEL	DMX VALUE	DESCRIPTION
1 Unit ON/OFF	0-37	Unit OFF
	38-74	Unit ON, animation
	75-110	Unit ON, geometric picture
	111-147	Unit ON, effect
	148-184	Unit ON, sound activation 1
	185-221	Unit ON, sound activation 2
	222-255	Unit ON, sound activation 3

Term explanation:
Animation: a program made by a group of constant pattern.
Geometric picture: static picture, users can edit moving effect via DMX512 controller.
Effect: pictures have had movement parameters, users cannot edit.

The following channels are only for channel 1 value 64-127, animation.

CHANNEL	DMX VALUE	DESCRIPTION
2 Animation Selection	0-25	Animation 1
	26-51	Animation 2
	51-76	Animation 3
	76-102	Animation 4
	102-127	Animation 5
	127-153	Animation 6
	153-178	Animation 7
	178-204	Animation 8
	204-229	Animation 9
	229-255	Animation 10
3	Not used	
4 Animation movement	0-25	Animation movement 1 (fastest)
	26-51	Animation movement 2
	52-77	Animation movement 3
	78-103	Animation movement 4
	104-129	Animation movement 5
	130-155	Animation movement 6
	156-181	Animation movement 7
	182-207	Animation movement 8
	208-233	Animation movement 9
	234-255	Animation movement 10 (slowest)
5 X Range adjust	0-15	Full range 1/16
	16-31	Full range 2/16
	32-47	Full range 3/16
	48-63	Full range 4/16
	64-79	Full range 5/16
	80-95	Full range 6/16
	96-111	Full range 7/16
	112-127	Full range 8/16
	128-143	Full range 9/16
	144-159	Full range 10/16
	160-175	Full range 11/16
	176-191	Full range 12/16
	192-207	Full range13/16
	208-223	Full range14/16
	224-239	Full range15/16
	240-255	Full range 100%

6 Y Range adjust	0-15	Full range1/16
	16-31	Full range2/16
	32-47	Full range3/16
	48-63	Full range4/16
	64-79	Full range5/16
	80-95	Full range6/16
	96-111	Full range7/16
	112-127	Full range8/16
	128-143	Full range9/16
	144-159	Full range10/16
	160-175	Full range11/16
	176-191	Full range12/16
	192-207	Full range13/16
	208-223	Full range14/16
	224-239	Full range15/16
	240-255	Full range 100%

The following channels are only for channel 1 value 128-191, geometric picture. PR-5030A stores 256 static pictures that divided into 16 groups through channel 2 to choose the group number; every group is made up of 16 pictures and through channel 3 to choose a picture and through other channel to edit dynamic effect such as zoom in, rotate, move, write, etc. You can also edit static effect such as corner.

CHANNEL	DMX VALUE	DESCRIPTION
2 Picture Group Selection (16 groups)	0-15	Picture group 1
	16-31	Picture group 2
	32-47	Picture group 3
	48-63	Picture group 4
	64-79	Picture group 5
	80-95	Picture group 6
	96-111	Picture group 7
	112-127	Picture group 8
	128-143	Picture group 9
	144-159	Picture group 10
	160-175	Picture group 11
	176-191	Picture group 12
	192-207	Picture group 13
	208-223	Picture group 14
	224-239	Picture group 15
	240-255	Picture group 16
3 Picture Selection (16 pieces)	0-15	Picture 1
	16-31	Picture 2
	32-47	Picture 3
	48-63	Picture 4
	64-79	Picture 5
	80-95	Picture 6
	96-111	Picture 7
	112-127	Picture 8
	128-143	Picture 9
	144-159	Picture 10
	160-175	Picture 11
	176-191	Picture 12
	192-207	Picture 13
	208-223	Picture 14
	224-239	Picture 15
	240-255	Picture 16
4	Not used	
5	0-15	Full range1/16

X Range Adjust	16-31	Full range2/16
	32-47	Full range3/16
	48-63	Full range4/16
	64-79	Full range5/16
	80-95	Full range6/16
	96-111	Full range7/16
	112-127	Full range8/16
	128-143	Full range9/16
	144-159	Full range10/16
	160-175	Full range11/16
	176-191	Full range12/16
	192-207	Full range13/16
	208-223	Full range14/16
	224-239	Full range15/16
	240-255	Full range 100%
6 Y Range Adjust	0-15	Full range1/16
	16-31	Full range2/16
	32-47	Full range3/16
	48-63	Full range4/16
	64-79	Full range5/16
	80-95	Full range6/16
	96-111	Full range7/16
	112-127	Full range8/16
	128-143	Full range9/16
	144-159	Full range10/16
	160-175	Full range11/16
	176-191	Full range12/16
	192-207	Full range13/16
	208-223	Full range14/16
	224-239	Full range15/16
	240-255	Full range 100%
7 Pan Rotation on Sixteen	0-15	Pan rotation without direction change
	16-31	Normal rotation from slow to fast
	32-47	
	48-63	
	64-79	
	80-95	
	96-111	
	112-127	
	128-143	Pan rotation without direction change
	144-159	Reverse rotation from slow to fast
	160-175	
	176-191	
	192-207	
	208-223	
	224-239	
	240-255	
8 Tilt Rotation on Sixteen	0-15	Tilt rotation without direction change
	16-31	Normal rotation from slow to fast
	32-47	
	48-63	
	64-79	
	80-95	
	96-111	
	112-127	
	128-143	Tilt rotation without direction change
	144-159	Reverse rotation from slow to fast
	160-175	
	176-191	
	192-207	
	208-223	

	224-239	
	240-255	
9 Z Rotation on Sixteen	0-15	Z rotation without direction change
	16-31	Normal rotation from slow to fast
	32-47	
	48-63	
	64-79	
	80-95	
	96-111	
	112-127	
	128-143	Z rotation without direction change
	144-159	Reverse rotation from slow to fast
	160-175	
	176-191	
	192-207	
	208-223	
	224-239	
	240-255	
10 Z Initial Angle	0-255	Anti-clockwise 2.8 degrees when move 2 DMX value
11 Zoom In and Out on Sixteen	0-15	Zoon in and out without change
	16-31	Zoon in range from small to large
	32-47	
	48-63	
	64-79	
	80-95	
	96-111	
	112-127	
	128-143	Zoon in and out without change
	144-159	Zoon out range from small to large
	160-175	
	176-191	
	192-207	
	208-223	
	224-239	
	240-255	
12 Pan Movement on 128	0-127	Normal movement increment increases
	128-255	Reverse movement increment decreases
13 Tilt Movement on 128	0-127	Normal movement increment increases
	128-255	Reverse movement increment decreases
14 Rotation Centre/Write □□ 3 □□	0-85	Rotate and zoom in/out round the figure centre
	86-171	Rotate and zoom in/out round the picture centre
	172-255	Under write circumstance
15 Scanning speed	0-15	Scanning speed is 24K
	16-31	Scanning speed is 23K
	32-47	Scanning speed is 22K
	48-63	Scanning speed is 21K
	64-79	Scanning speed is 20K
	80-95	Scanning speed is 19K
	96-111	Scanning speed is 18K
	112-127	Scanning speed is 17K
	128-143	Scanning speed is 16K
	144-159	Scanning speed is 15K
	160-175	Scanning speed is 14K
	176-191	Scanning speed is 13K
	192-207	Scanning speed is 12K
	208-223	Scanning speed is 11K
	224-239	Scanning speed is 10K
	240-255	Scanning speed is 9K
16 Strobe	0-25	Strobe closed
	26-51	Strobe 1 (slow)
	52-77	Strobe 2

	78-103	Strobe 3
	104-129	Strobe 4
	130-155	Strobe 5
	156-181	Strobe 6
	182-207	Strobe 7
	208-233	Strobe 8
	234-255	Strobe 9 (fast)

Warning: when use DMX512 to control, some of picture under the edit effect may result in unsafe projections. It is suggested that a scanner safety board should be used in conjunction with this program board if you intend on audience scanning

The following channels are only for channel 1 value 192-255, effect selection. PR-5030A stores 256 pieces of “picture combination effect” which have had movement parameter and divided into 16 groups. Every group has 16 “picture combination effect”, through channel 2 to choose a group and through channel 3 to choose a “picture combination effect” in the group. “Picture combination effect” is different from common picture and it is designed specially and cannot be edited.

CHANNEL	DMX VALUE	DESCRIPTION
2 Display picture group selection	0-15	Display picture group 1
	16-31	Display picture group 2
	32-47	Display picture group 3
	48-63	Display picture group 4
	64-79	Display picture group 5
	80-95	Display picture group 6
	96-111	Display picture group 7
	112-127	Display picture group 8
	128-143	Display picture group 9
	144-159	Display picture group 10
	160-175	Display picture group 11
	176-191	Display picture group 12
	192-207	Display picture group 13
	208-223	Display picture group 14
	224-239	Display picture group 15
	240-255	Display picture group 16
3 Display picture selection	0-15	Display picture 1
	16-31	Display picture 2
	32-47	Display picture 3
	48-63	Display picture 4
	64-79	Display picture 5
	80-95	Display picture 6
	96-111	Display picture 7
	112-127	Display picture 8
	128-143	Display picture 9
	144-159	Display picture 10
	160-175	Display picture 11
	176-191	Display picture 12
	192-207	Display picture 13
	208-223	Display picture 14
	224-239	Display picture 15
	240-255	Display picture 16

4	Not used	
5 X Range Adjust	0-15	Full range1/16
	16-31	Full range2/16
	32-47	Full range3/16
	48-63	Full range4/16
	64-79	Full range5/16
	80-95	Full range6/16
	96-111	Full range7/16
	112-127	Full range8/16
	128-143	Full range9/16
	144-159	Full range10/16
	160-175	Full range11/16
	176-191	Full range12/16
	192-207	Full range13/16
	208-223	Full range14/16
	224-239	Full range15/16
	240-255	Full range 100%
6 Y Range Adjust	0-15	Full range1/16
	16-31	Full range2/16
	32-47	Full range3/16
	48-63	Full range4/16
	64-79	Full range5/16
	80-95	Full range6/16
	96-111	Full range7/16
	112-127	Full range8/16
	128-143	Full range9/16
	144-159	Full range10/16
	160-175	Full range11/16
	176-191	Full range12/16
	192-207	Full range13/16
	208-223	Full range14/16
	224-239	Full range15/16
	240-255	Full range 100%

OPERATION FOR DATA REFRESH

1. Connect the power cord and cable of data refresh with the unit, and the other end of the cable of data refresh connecting with a personal computer. **Note:** The power must be cut off before this operation.

2. First, turn on the computer power, and then the unit's power.

3. Don't run the data refresh program until the red LED near the unit's screen is blinking. Set the computer's interface of COM1 or COM2 according to the cable of data refresh you have connected.

4. Running software, refer to user manual of relative software.

Note: During transmitting the data, the power of the unit cannot be off; otherwise, some components inside the unit may be damaged! Wait until appear the dialog box for complete transmitting, and then you turn off the unit.

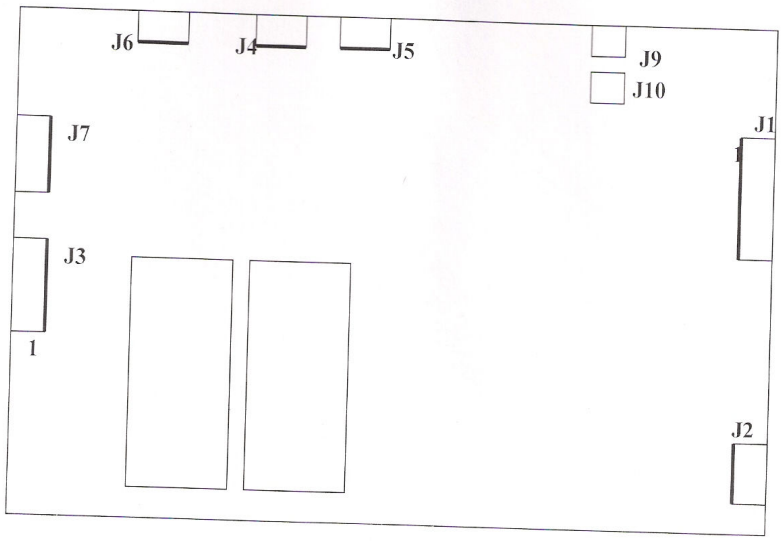
5. After turning off the unit's power, pull the data refresh cable out of the unit. Connect the DMX512 cable to the unit for operation.

6. The data refresh cable is made up of DB9/M and DB9/F plugs and 3 core screened cable as shown below.

ZK4-02lingking

2005-11-22

Top view:



The description of connector

J1：output to setting board，6pin，pin to pin。

J2：DMX512 input；PIN1：GND，PIN2：s+，PIN3：s-

J3：power in；PIN1：-24V，PIN2：+24V，PIN3/4：GND，PIN5：+5V

J4：X scanner output；PIN1：s+，PIN2：s-，PIN3：GND。

J5：Y scanner output；PIN1：s+，PIN2：s-，PIN3：GND

J6：data reflash port,Rs232；

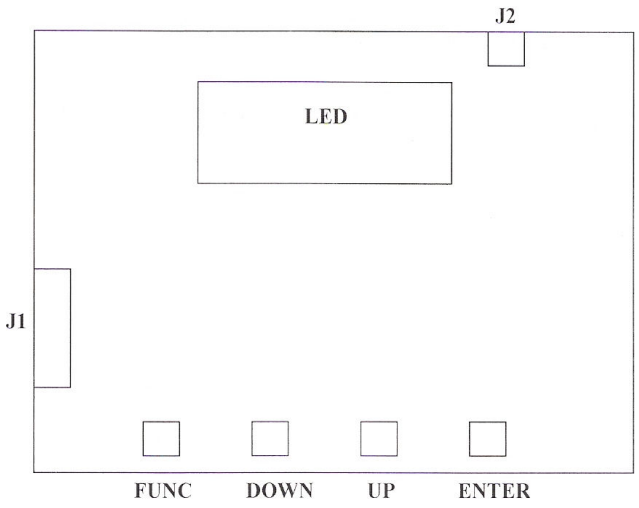
J7：power output(backup)

J9：laser Mod output(green)；PIN1：M+（TTL，high=laser on），PIN2：GND

J10：laser Mod output(red)；PIN1：M+（TTL，hign=laser on），PIN2：GND

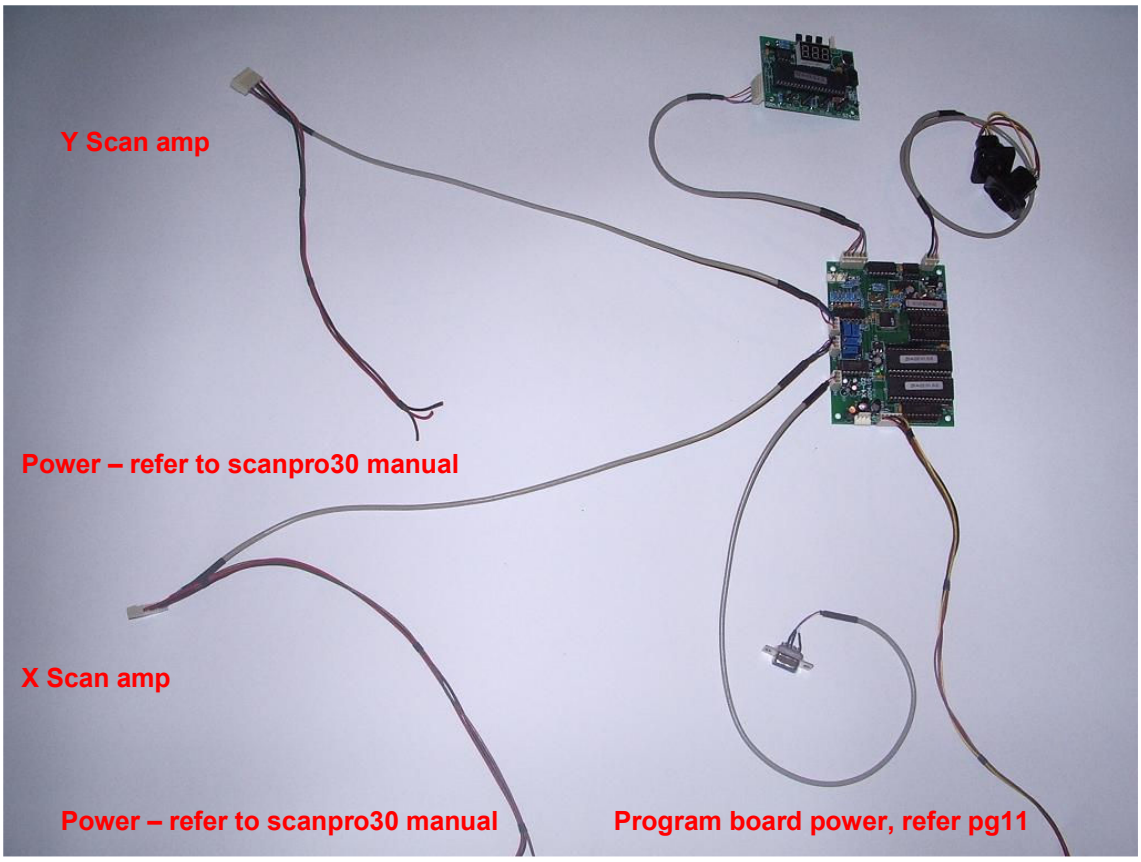
Display and setting board

Top view:



J1:output to main board，6pin，pin to pin

J2: Potentiometer for sound (20K)


Y Scan amp
Power – refer to scanpro30 manual
X Scan amp
Power – refer to scanpro30 manual
Program board power, refer pg11